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MANDELIX

(Elixir of Ammonium Mandelate B.D.H.)

In the Treatment of Urinary Infections

THE BRITISH DRUG HOUSES LTD.

LONDON N-1

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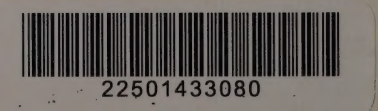

MANDELIX

(Elixir of Ammonium Mandelate B.D.H.)

In the Treatment of Urinary Infections

In the original investigation (Rosenheim, M.L., *Lancet*, 1935, ***1,*** 1032) upon the treatment of urinary infections with mandelic acid, and in subsequent clinical trials (Lyon, D.M. and Dunlop, D.M., *Brit. Med. Journ.*, 1935, ***2,*** 1096), the acid itself dissolved in water and neutralised with sodium bicarbonate was used. Later, the pure sodium salt was administered, and, subsequently, the treatment was simplified by the introduction of the Mandelic Acid B.D.H. Outfit. In this outfit the sodium mandelate is supplied in tablet form, various accessories are provided for ascertaining the *p*H of the urine and ammonium chloride is supplied in capsules for maintaining the required urinary acidity. The essential feature of the oral administration of mandelic acid in the form of its sodium salt, however, is that the collateral administration of ammonium chloride is necessary; such administration, unfortunately, has the drawback that in some cases it is liable to cause nausea and even vomiting; further, it has been held responsible for the onset of albuminuria and the occurrence of casts in the urine when these phenomena have occurred occasionally in cases undergoing mandelic acid treatment.

The mode of action of ammonium chloride in producing urinary acidity during sodium mandelate therapy is probably that the ammonium ions are converted into urea, leaving free hydrochloric acid which, in turn, reacts with sodium mandelate to form sodium chloride and mandelic acid. It has been

suggested, therefore, that a more direct method of producing urinary acidity, and thus of ensuring maximum therapeutic action of mandelic acid, is to administer ammonium mandelate instead of sodium mandelate and ammonium chloride.

Ammonium Mandelate B.D.H., in the form of an elixir, has accordingly been prepared and submitted to clinical trial. The report on the results (Holling, H. E., and Platt, R., *Lancet*, 1936, *1*, 769) demonstrates that, therapeutically, Ammonium Mandelate B.D.H. is just as effective as sodium mandelate with the added advantage that in a small proportion of the cases only is the collateral administration of ammonium chloride necessary, and then only in comparatively small dosage.

The elixir supplied for the afore-mentioned clinical trials contained in the form of ammonium mandelate the equivalent of 30 grains (2 grammes) of mandelic acid per fluid ounce; this elixir is superseded, however, by a more concentrated elixir which is available for general clinical use under the name Mandelix.

Mandelix contains in 2 fluid drachms the equivalent of the full therapeutic dose (3 grammes) of mandelic acid.

By the administration of Mandelix the maximum bacteriostatic action of the mandelic acid is ensured with the minimum of inconvenience to the patient.

TECHNIQUE OF TREATMENT AND DOSAGE

The normal adult dose of Mandelix is 2 fluid drachms, diluted with about 2 fluid ounces of water, four times daily, the total liquid intake not exceeding two pints daily. In most cases, the urinary *p*H of 5·3 is attained after a few doses of Mandelix; it is necessary, however, to make regular daily tests of the *p*H of the urine; that is to say, care must be taken to ensure that the urinary acidity is that

indicated by a *p*H of 5·3, or lower. For the purpose of carrying out such tests there is available as part of the Mandelix Outfit a small testing equipment comprising a bottle of methyl red indicator, a test-tube marked at 2 c.c., a dropping-pipette, and a sealed tube containing a solution of methyl red buffered at *p*H 5·3 and forming a colour standard. The directions for carrying out the test are as follows :—

> By means of a small, lipped, enamelled jug transfer a sufficiency of the urine to be tested to reach the 2 c.c. mark on the test-tube supplied with the outfit. Draw a quantity of the methyl red indicator from the bottle into the dropping-pipette supplied for the purpose and add five drops of indicator to the urine in the test-tube. Shake gently until the colour is uniform, then compare it with that of the liquid in the sealed colour-standard tube supplied. If a yellowish pink colour is produced, it is an indication that the urine is insufficiently acid, a condition which should be corrected by the administration of ammonium chloride. In practice, however, such administration is seldom necessary, the testing of the urine being simply a precautionary measure which may be discontinued, or at least only done at intervals, after the first few days of treatment when it is reasonably certain that the urinary *p*H will remain at or below 5·3.

Clinical trials with Mandelix have confirmed the truth of the hypothesis that by the administration of ammonium mandelate the *p*H of the urine is maintained at the necessary level in all but very exceptional cases, without the collateral administration of ammonium chloride. In the few cases, however, in which it is necessary to administer ammonium chloride in order to increase the acidity of the urine this can be done at the physician's discretion either by giving one of the capsules supplied as part of the Mandelix outfit or by prescribing a mixture such as—

℞

Ammon. chlorid.	gr. x
Ext. glycyrrh. liq.	m. x
Aq. dest. ad	℥i

M. ft. mist.

In those rare cases in which the administration of Mandelix produces a urine which is excessively acid (with an accompanying risk of casts being produced in the urine), that is to

say a deep pink colour is produced when the urinary test is carried out as described, a small quantity of sodium bicarbonate may be administered with the Mandelix until the correct urinary *p*H is produced.

As in the mandelic acid treatment with sodium mandelate and ammonium chloride, Mandelix is contra-indicated in cases of renal impairment.

MODE OF ISSUE

Mandelix (Elixir of Ammonium Mandelate B.D.H.) is issued as a part of a complete outfit containing the necessary equipment for a course of treatment lasting for seven days. The outfit consists of:—

28 × 2 fluid drachm doses of Mandelix

A graduated glass measure for measuring the correct dose of Mandelix

One dozen capsules each containing 1 gramme of ammonium chloride, for use if required

A testing outfit containing the necessary equipment for use in the determination of the *p*H of urine as described on page 5

Price of the complete outfit . . . **18s. 0d.**

Note—7⅛ fluid ounces of Mandelix are provided instead of exactly 7 fluid ounces in order to compensate for the slight loss involved in measuring 28 successive doses

Replacements for the individual items in the outfit are available separately at the following prices:—

Mandelix—bottles of 7½ fluid ounces . .	per bottle	12*s.* 6*d.*
Ammonium chloride capsules—each containing 1 gramme . . .	per dozen	1*s.* 6*d.*
Graduated glass measure . . .	each	9*d.*
Small testing outfit	,,	2*s.* 9*d.*

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